



FAA-P-2520

February 14, 1972

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
PURCHASE DESCRIPTION**

TELEVISION MAINTENANCE MONITOR

1. SCOPE

1.1 Scope.- This document describes the performance requirements for a high resolution (945 line) television monitor to be used by maintenance personnel for observing the output of the TV camera which is a part of the Bright Radar Indicator - Tower Equipment (BRITE) system.

2. APPLICABLE DOCUMENTS

2.1 Military specification.- The following Military specification, of the issues specified in the invitation for bids or request for proposals, form a part of this purchase description.

MIL-E-17555 Electronic and Electrical Equipment, Accessories,
and Repair Parts, Packaging and Packing of

3. REQUIREMENTS

3.1 Equipment to be furnished by the contractor.- Each monitor furnished by the contractor shall be complete in accordance with all of the items described herein. Two copies of an instruction manual, meeting the requirements of paragraph 3.11 shall be furnished with each equipment.

3.2 Size and mounting.- The TV monitor shall use a 17-inch cathode ray tube, type number 17127P4. The monitor shall be housed in a metal cabinet for dolly or table top mounting. The monitor shall also be adaptable to rack mounting in a 19-inch panel size rack. Where specified in the contract, accessory hardware for mounting the monitor in a rack shall be provided.

3.3 Service conditions.- The TV monitor shall perform in accordance with the requirements of this document under the following conditions.

Ambient temperature	10° to 40°C
AC Line voltage	105 to 130 VAC
AC Line frequency	59 to 61 HZ
Altitude	Up to 10,000 feet
Duty	Continuous, unattended

3.4 Television signal characteristics.- The TV monitor shall generate a rectilinear raster operating from a composite TV camera signal having the following characteristics.

Frames per second	30
Fields per frame	2 (interlaced)
Active field time	93% \pm 2%
Active line time	80% \pm 2%
Horizontal scanning frequency	28,350 HZ (945 lines frame)
Aspect ratio	4:3/1:1 (adjustable)
Video input level	0.3 volts to 4.0 volts (composite)

3.5 Adjustable aspect ratio.- By front panel switch, the ratio of width to frame height shall be selectable as 4:3 or 1:1. The performance requirements shall be met with either aspect ratio.

3.6 Resolution requirements.- The TV monitor shall provide the following resolution, as a minimum.

Horizontal Resolution

Center	1000 TV Lines
Corner	800 TV Lines

Vertical Resolution

Center	630 TV Lines
Corners	600 TV Lines

3.7 Input impedance.- The TV monitor shall provide for high impedance looping through to another TV monitor or for termination into a resistance of 75 ohms \pm 1%. The desired impedance shall be switch selectable. The high impedance input unterminated shall be no less than 2000 ohms.

3.8 Other TV monitor performance requirements.- The TV monitor shall meet the following requirements.

Sweep Linearity (Horizontal and Vertical)	Linear within \pm 2% of the picture height
Gray Scale Reproduction	10 shades of gray
Line Pairing	Vertical distance between horizontal lines shall not vary more than 10%
DC Restoration	Switch selectable as 0 or 100%
Differential Gain	Video gain shall not vary more than 10% from black to white

3.9 General display quality.- The TV monitor shall provide stable performance and there shall be no evidence of jitter, TV synch breathing, bounce, improper interlace or TV picture pulling, streaking or tearing.

3.10 Monitor controls.- The following controls, as a minimum, shall be provided on the front panel of the TV monitor.

- a. Picture width (3.5)
- b. Picture height (3.5)
- c. Horizontal hold
- d. Vertical hold
- e. Brightness
- f. Contrast
- g. OFF - ON Switch

Other controls in the form of easily accessible screwdriver adjustments shall be provided for maintenance adjustments of the monitor. Conveniently accessible test points shall be provided for adjustment, measurement or observation of monitor operating parameters that verify equipment performance.

3.11 Instruction Books.- Commercial quality instruction books shall be furnished which fully describe the equipment and as a minimum contain the following:

- a. Manufacturer's name and address
- b. General description
- c. Theory of operation
- d. Operating instructions (Installation and Tune-up procedures)
- e. Complete Schematic diagrams
- f. Complete replaceable parts list
- g. Maintenance instructions (Trouble shooting procedures)
- h. Photograph of equipment
- i. Guarantee clause

4. QUALITY ASSURANCE PROVISIONS

4.1 Test and inspection.- The contractor shall perform tests of the following to verify performance requirements. Where appropriate, the contractor shall use standard EIA test patterns and ball and grating bar patterns.

- a. Raster characteristics (3.4)
- b. AC line voltage variations (3.3)
- c. Resolution (3.6)
- d. Sweep linearity (3.8)
- e. Gray scale (3.8)
- f. Interlace (3.8)
- g. General display quality (3.9)

The Government reserves the right to witness any tests and to carry out visual and other inspection as deemed necessary to assure compliance with the requirements described herein.

5. PREPARATION FOR DELIVERY

5.1 General.- Preparation for delivery shall be in accordance with MIL-E-17555 Level "B".